RFMD GaN Wideband Power Amplifier ICs

RFMD announced sampling of GaN wideband power amplifier ICs to Tier 1 WiMAX, cellular base station, and Public Mobile Radio (PMR) customers.

The family achieves superior performance in gain, output power, and efficiency across a broad range of frequencies as compared to currently available GaAs and silicon LDMOS products.

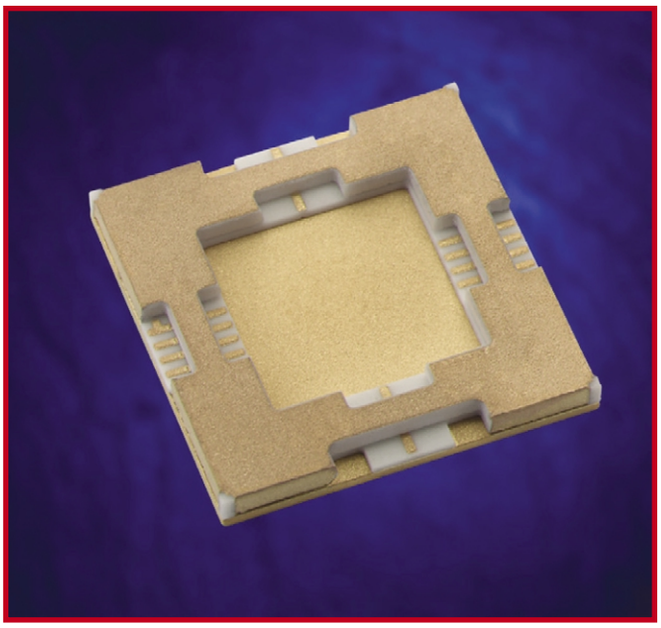
It includes multiple parts, RF3821 (8 W P1dB WiMAX PA, 2.3-2.7 GHz), RF 3823 (8 W P1dB WiMAX PA, 3.3-3.8 GHz), RF3822 (14 W saturated power Public Mobile Radio PA, 100-1000 MHz), and RF 3820 (8 W P1dB cellular PA, 1.8-2.2 GHz). Both WiMAX power amplifier ICs provide 29 dBm linear output power with 2.5% EVM and flat gain of 11 dB across multiple bands.

The cellular power amplifier IC provides 27 dBm linear output power with -50 dBc ACPR and flat gain of 13 dB across DCS/PCS/WCDMA frequency bands. The PMR power amplifier IC provides 14 W to 12 W saturated output power and flat gain of 11.5 dB with PAE of 65% mid band at 500 MHz. The designs operate on a 28 V rail and include internal-matching elements to deliver a 50-ohm interface over the band of operation and are packaged in a thermally enhanced AlN package for efficient heat removal. RFMD anticipates production shipments of the GaN power amplifiers will commence in calendar year 2007.

Web: www.rfmd.com

Mars Rovers Rely On StratEdge Power Amplifier Package

StratEdge said that one of its SE20 power amplifier packages is playing a key role in transmitting signals with information gathered from Mars Exploration Rovers, Spirit and Opportunity, back to earth. The power amplifier package is used to protect the GaAs MMICs and ensure signal integrity.



All signals that are transmitted from the rovers go through a StratEdge package. The rovers communicate at X-Band frequency. It's critical that the package doesn't interfere with the signals produced by the MMIC. The package has continuous gold traces that run through the package wall. The design of these highly conductive traces minimizes signal loss so the MMIC performs optimally. Single transition insertion loss is better than 0.1 dB at X-Band.

The rugged StratEdge package is fully hermetic. The package has a copper composite base with a thermal conductivity of 170 W/m-K. The high thermal conductivity of the base reduces the junction temperature and enhances reliability of the MMIC. The package can withstand temperatures from -60 to +250°F (-16 to +121°C).

The StratEdge package was incorporated into Motorola's electronic communications assembly. General Dynamics acquired Motorola Integrated Information Systems Group in 2001. Motorola was looking for packages with exceptional electrical performance and good hermeticity, and had previously used StratEdge packages for high reliability space applications. The rovers were launched in June and July of 2003 with a lifetime anticipated at three months once they landed on Mars. The rovers have been in service for several times their designed life.

Web: www.stratedge.com

Toshiba GaN Beats GaAs for Power FETs

Toshiba has developed a GaN power FET that it claims far exceeds the operating performance of GaAs FET widely used in microwave solid-state amplifiers for radar and satellite microwave communications in the 8 GHz to 12 GHz X-band frequency range.

The new transistor achieves an output power of 81.3 W at 9.5 GHz, which is believed to be the highest level of performance yet reported at this frequency. Toshiba realized this breakthrough performance enhancement by optimizing the epilayer and chip structures for X-band operation.

Toshiba's GaN power FET has six times the power density of a GaAs FET and the world's highest output power at the 9.5 GHz frequency level. It has established manufacturing technology for GaN power FETs in the range of 50 W and started to release samples. The company expects to start mass production within the next six months.

Web: eu.computers.toshiba-europe.com